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Aijun Zhang* (zhangai@tigermail.auburn.edu), Lafayette, LA, and **Azmy Ackleh, Amy Veprauskas** and **Md Istiaq Hossain**. *Persistence and Local Stability of Discrete-Time Predator-Prey Systems*.

This talk is devoted to the study of persistence and local stability of a discrete-time predator-prey system. First we establish a sufficient and necessary condition for the existence and uniqueness of a positive equilibrium. Then we investigate the local stability of equilibria by studying their Jury's Conditions. In addition, we will show the persistence of the model under some conditions. Finally we extend this model to an evolutionary model with the prey exposed to a toxicant. (Received January 25, 2019)